

## FLOATING APERTURE ENCODER

### ABSTRACT OF THE DISCLOSURE

An encoder includes a housing, a light source coupled to the housing, and a light sensor coupled to the housing and positioned to receive a light beam from the light source. The encoder also includes a wheel having opaque and transmissive sections which may be positioned to pass through the light beam before it reaches the light sensor. The encoder further includes a floating aperture piece, which defines at least one aperture. The aperture is positioned so that the light beam must pass through it before reaching the light sensor. The floating aperture piece slidably engages the housing while allowing a loose tolerance between a position of the wheel and a position of the housing, thereby substantially eliminating a positioning error between the aperture and the wheel.